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RE-SHAPING OUR FOREST POLICY

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WHAT is wrong with American forestry? For twenty years magazine articles and public print in general were loud in praise of what appeared to the layman to be rapid progress in forestry. To-day these same periodicals are seriously questioning the security of our future timber supply. Our metropolitan press and country newspapers are calling attention to the growing scarcity of forest products, particularly high grades of lumber and wood pulp. Sunday editions of our more important papers are printing articles dealing with the scarcity of wood and the remarkable advance in price and urging the necessity for forest conservation. As a nation we have been prone to look with satisfaction upon the development of the U. S. Forest Service from the small beginnings of three decades ago to a great department of the national government, reaching into every corner of the country and disposing of an annual budget of more than six million dollars. We have pointed with pride to our hundred fifty million acres of national forests all established within the past thirty years and now under management for sustained yield. We have created departments of forestry in many states and acquired several millions of acres of state forests. We have established more than twenty schools of forestry and departments of forestry in our colleges and universities. At present thousands of foresters are coming in contact with our forests where there were none thirty years ago. Forestry is no longer an unknown profession. We have a rapidly increasing forestry literature. The past three decades have seen much water pass under the bridge, yet with all this the problem of our future timber supply remains unsolved. There appears to be no hope for its solution under our present forest policy.

Lumbermen who have been exploiting our forests and transforming them into vast areas of desolation see the end of their supply of raw materials. Some of them have publicly announced that both national and industrial welfare demand the early development of an American forest policy which will substitute for indifference, ignorance and accident, an intelligent, practical, equable and concerted program for the replacement of forests adequate in area and quality for the future needs of the nation. National, regional and local associations of lumbermen

and large users of forest products such as the National Lumber Manufacturers' Association, Western Forestry and Conservation Association, the Southern Pine Association and the American Paper and Pulp Association, have recently established forestry committees because they see the imperative need of forest renewal if the industries which they represent are to endure. National and regional associations of professional foresters, such as the Society of American Foresters, and the United States Forest Service, are diligently at work in an effort to create a public sentiment which will force the solution of the problem of forest renewal. Vituperation and condemnation of the lumbermen and private owners will not solve the problem. It can only be solved through change in point of view, through the adoption of a new policy effectively carried out. We must learn to treat the forest as a renewable resource. In my judgment, this can only be attained through the heartiest co-operation between the public and the owners of our forests.

Although the lumberman and layman appreciate the seriousness of present conditions, if these are permitted to endure, they are discouragingly indifferent when it comes to the point of providing an effective remedy. Although they know that the forest influences the life and property of towns and cities, states and nations, each individually "leaves it to George" to change present conditions. Although they know that there is essential need for forests under sustained yield to supply necessary raw materials, to protect water-sheds and regulate the flow of streams, to afford refuge for wild life, to maintain soil fertility and provide recreation grounds for the public; under our present forest policy and forest laws this recognition is not checking forest devastation and there is no hope that it will.

The public have been sitting on the side lines and silently witnessing the disappearance of one of our greatest resources. This is all the more deplorable from the fact that the forest is a renewable resource when given conscious care. Although the lumberman and the private forest owner see the end of the supply of virgin timber the remainder is harvested for the most part with scarcely a thought and entirely without consideration for future crops. The regrettable fact is that while they appreciate the deplorable situation into which we are rapidly drifting, they are not interested in doing very much in the way of forest replacement. It is rare indeed that any provision has been made in the past by private owners for starting new crops, and little effort has been expended in protecting the second growth which follows exploitation. What protection the private owner has given his forest property has centered in protecting his mature timber. He has spent little to keep forest lands in continuous production. New crops have been usually left to chance. In short the private owner of forest property in this country has not been and is not now in the business of growing timber

although he often owns vast areas of absolute forest land which ought to be maintained in continuous production.

EVOLUTION OF OUR LUMBER INDUSTRY

For a hundred years American lumbermen have been acquiring and bringing together operating units of timberland to be exploited and finally left to become areas of desolation and waste without hope of future crops of essential value. They have accumulated acreage in one locality, devastated it, moved to another and repeated the operation. The process of moving into a virgin forest, destroying it from the standpoint of sustained yield and moving into another has gone on since the settlement of our country. With the reduction in the supply of pine and spruce stumpage in New England, American lumbermen moved into the great unbroken forests of the Lake States. After a few decades they left this region a desert of blackened stumps without reproduction and moved into the southern pineries where vast areas of virgin soft woods awaited them and to-day they are trekking across the plains to our last great bulwark of virgin timber, the Pacific Northwest.

Early in the last century New England supplied the bulk of the forest products consumed by the entire country. To-day her timber needs are largely supplied from outside sources. Thirty to forty years ago the Lake States formed the greatest lumber producing region in the world. To-day they scarcely supply their own needs. A decade ago the South was at the crest of its timber production. The apex has already been reached and the decline in annual yield is well under way. Although this region has been for two decades the greatest producer of high grade timbers of any region in the world it will soon pass as an exporting region and be scarcely able to supply its own needs. Investigations made by the United States Forest Service show that in another ten years more than one half of the localities in the South from which the mills now obtain their logs will be cut out and more than three thousand saw mills operating in pine will be forced into idleness due to exhausted stumpage. It should be emphasized that the present yield cannot be maintained because the stumpage is no longer there. In the place of vast areas of southern pine which for the past quarter century have been the world's chief supply of high grade timber there will be left many million acres of denuded and devastated forest largely without reproduction and an economic waste.

The progressive exhaustion of the forest capital of New England, the Lake States, and the Southern States, particularly the laying waste of a large part of the absolute forest land east of the Great Plains, is now forcing America to draw more and more of her forest products from Canada and the Pacific Coast. In another decade the Pacific

Northwest bids fair to supply the bulk of the nation's high grade timber.

ENHANCED COST OF FOREST PRODUCTS

The consuming public do not as yet fully appreciate what this means in enhanced cost of forest products. Lumber is an unwieldy and bulky product. A large part of its cost to the consumer is freight. Even now we pay about one hundred and seventy-five million dollars annually for railroad transportation of forest products. When the bulk of our timber comes from the Pacific Coast our annual freight bill on forest products alone is likely to exceed a half billion dollars. Were the supply of timber on the Pacific Coast unlimited in quantity and in no danger of exhaustion it would still be economically unwise to continue the devastation of absolute forest lands east of the Great Plains and make no attempt to reforest lands now idle. In the long run national economy demands that our forests be well distributed over the country.

The falling off in supplies of stumpage in eastern United States, thus causing the people to depend more and more on the Pacific Coast and importations from Canada, has had an important effect upon values. Furthermore the segregation of the national forests which embrace about one fifth of the total forests of the country from the public domain has left the lumbermen no new fields to conquer, no new sources of supply coming as free gifts from the nation. As the lumbermen cut out their present holdings they will find it increasingly difficult to find new fields for their activities. As a consequence we are at the beginning of keen competition by saw mill operators for our remaining stumpage. Heretofore the price of stumpage has been low. From now on it will increase with more or less rapidity until it approaches the actual cost involved in growing a crop of timber. Stumpage prices are certain to maintain a steady increase even through periods of rise and fall in the lumber market. The peak will not be reached until it sells at or somewhat above the actual cost of its replacement. Measured by this standard, although all classes of stumpage are rising in value, it has not as yet reached a price anything like the actual cost involved in establishing and developing commercial stands under forest management. Stumpage is at the beginning of a steady and rapid increase in price and is destined within the next decade or two *to reach two to four times its present value.*

The increase in lumber prices during the war and since the armistice has not as yet been reflected in the cost of stumpage. Those of us who are consumers of wood are looking for the prices of saw mill products to fall. Although there may be some fluctuations in present wholesale and retail prices, the general trend will not be downward, for

the excessive profits now being made by the lumber manufacturers will shortly be transferred to the rapidly increasing price of stumpage. There will be no such thing as a return to pre-war values and we are never again likely to see lumber sell at prices prevailing six to ten years ago.

A few months ago quarter-sawed white oak suitable for furniture sold for four hundred and forty dollars per thousand feet, b. m. in New York City, oak flooring sold for three hundred and forty dollars per thousand feet, b. m., in the Boston market. Second growth white pine box boards have recently sold in New England for sixty dollars per thousand feet, b. m., and chestnut plank from local mills has recently brought as much as seventy dollars per thousand feet, b. m., in Connecticut. Only recently certain grades of Douglas fir in the State of Washington have brought for the first time in history as much as one hundred dollars per thousand feet, b. m. These values are fully three times pre-war prices for the same classes of material.

THE PAPER SITUATION

So far as available wood for paper is concerned it is conceded by experts that the visible supply of pulp wood in eastern United States will carry our mills but few years at the most. With the enormous increase in demand for paper in recent years, the mills of New England and New York have been utterly unable to increase their supply of raw products except through importation from Canada. Secretary Houston has recently stated that only one third of the American newspapers issued in 1919 were printed upon the products of our own forests. Although twenty years ago practically all our paper came from our own woods to-day much of it is from Canadian forests. We are even importing news stock from Norway and Sweden.

This is a paper age. The American Paper and Pulp Association states that since 1880 we have increased our annual consumption of news stock alone from three pounds per capita to nearly thirty-five. Our total consumption of all classes of paper is well over one hundred pounds per capita. So far as stumpage for paper is concerned we are already in a serious and critical position. During recent months some of the manufacturers of paper pulp in New York and New England are reported to have paid as high as thirty-nine dollars per cord for spruce.

Only a few months ago the Secretary of Agriculture in calling attention to the large areas of pulp wood along the Alaskan Coast stated that here is a supply to which the nation can turn for immediate relief while it is developing new supplies through forest replacement. *Are we as a nation going to develop new supplies through forest replacement?* We are not unless we re-shape our forest policy.

THE CAUSE OF INCREASED PRICES

The recent increase in cost of all classes of forest products can not be entirely credited to the war. The cost of forest products to the consumer has increased more than any other important class of basic resources. Although post-war conditions are to blame for the sudden jump in prices within the past year, a part of the increase must be credited to the rapidly increasing scarcity of commercial timber which had begun to be felt even before the war.

Heretofore only a small number of American citizens whose voices have been like a cry in the wilderness have taken more than a passing interest in our forests and the problems relating to their use and renewal. The average man has been satisfied so long as the market supplied him with forest products at low cost and he was able to find wild places for hunting, fishing and other forms of recreation. The recent public interest in forest renewal is due to what you and I, the average citizen, are forced to pay for wood. When we pay three or four times the former price for a standard product we stop and reflect. Although in this case we appreciate the part that the war has played in increasing the prices we find that back of the war, back of the manufacturers, back of the wholesaler and retailer is the basic problem of raw materials.

THE MAGNITUDE OF OUR FOREST INDUSTRY

The magnitude of our forest industry and the volume of forest products that enter into our domestic and export trade is shown in our latest census report. In round numbers fifty-two thousand manufacturing establishments in this country, or nineteen per cent of all, are dependent for their continued operation either wholly or partly upon the output of raw products from the forest. These establishments furnish employment for 1,130,000 workers or approximately one-sixth of the seven million workers in manufacturing industries. Our forests supply the raw materials for industries in which a total of three billion dollars is invested. Yet we are without an effective forest policy, without laws or machinery under which adequate forest replacement is possible.

FALSE BASIS OF OUR LUMBER INDUSTRY

Our lumbering and allied industries have been erected on the basis of the original or virgin forest. Even the average man now sees that we cannot go on indefinitely relying upon the old-growth forests. We have already reached the point where we clearly see the commercial exhaustion of old-growth timber. It has already completely disappeared from many states and in other states only a remnant remains of the vast stands that less than fifty years ago were the most

important sources of the world's timber supply. Ultimately all our timber must come from second growth forests. Our attention, therefore, must immediately be directed to the areas from which the old-growth has been removed. It is these areas that must furnish the bulk of our timber supply before the end of the present century. While we are improving and protecting the young growth on these areas and planting new forests, there should be a closer and better utilization, a better protection and more careful husbanding of the remaining old growth in order that it may last until a new growth sufficient to supply a considerable part of our needs is ready for the saw and axe.

Only a few months ago one of our largest private corporations owning timberland in the United States published a prospectus distributed for the purpose of advertising a bond issue in which it was stated that at its present rate of annual cut, its stumpage will last about forty years. Like practically all other private owners of timberland this company considers its stumpage in the same light as the miner considers the mineral in his mining claims. In other words the company considers it exhaustible and pays no heed whatever to the possibility of its renewal. This case illustrates the almost universal attitude that has prevailed heretofore in the management of American timberland by private owners. So long as private citizens control through ownership nearly four-fifths of our forests and so long as the public by co-operation or other means are unable to stop forest devastation on private holdings there will be insufficient reproduction and present prices for forest products are only a fraction of what they are likely to be later.

OUR LAVISH USE OF FOREST PRODUCTS

As a nation we have grown to our present stature lavish in the use of wood and other forest products. Heretofore we have looked for and found our needed supplies in the vast areas of virgin forest which covered nearly fifty per cent of this country when settlement began. We have been favored with relatively inexpensive forest products. We have lavishly used a hundred species of trees, many growing to massive size and splendid proportions. We have had abundance of wood for every need and have become accustomed to using it without stint and without thought for the future. We have led the world in the consumption of forest products and we have gathered them from the abundance provided by nature. So long as unoccupied public domain could be deeded in the form of homesteads and timber claims to the individual and at a cost to them of but a few dollars per acre, stumpage necessarily remained low. There was always a large supply in private hands awaiting a market. The

nation in her generosity gave her splendid areas of virgin forests to her citizens. The private owner could well afford to sell timber on the stump for a few cents per thousand feet, b. m. Less than a half century ago virgin redwood stands cutting from fifty to one hundred thousand feet, b. m., per acre, were given away or disposed of by the nation for two and one half dollars per acre on a basis of two and one-half to five cents per thousand feet, b. m. A few months ago British Columbia, which had the foresight to reserve its timber, sold less valuable stumpage for as much as \$250.00 per acre.

FOREST RESERVES

The disposing of absolute forest land for a mere fraction of its real value continued until the Cleveland administration. We never should have permitted any of it to pass to private ownership. Canada did not and to-day is reaping the benefit. Having made this serious economic mistake which has led to extravagance, waste and lavish use, we should have corrected it by creating national forests long before we did. As it is, *our publicly owned forests are entirely inadequate to supply more than a mere fraction of our future requirements.* Unless the area is greatly increased, which can only be done at large expense, what the forester has done in the past and what he will be able to do in the future in their organization and management can have but little effect in solving our forest problem.

It was to the everlasting good fortune of the American people that a rider on an appropriation bill in the early 90's escaped the eyes of Congress and gave authority to the president to create national forests from the unoccupied public domain. It is difficult to say when or how the wholesale misuse of the public land laws would have ended if it had not been for the authority under which about one hundred fifty national forests with an average area of nearly one million acres each have been segregated from the national domain and dedicated to the production of timber under regulation and ownership by the nation.

It is fairly safe to say that if the former policy of the land office had continued until the present day all our forests would ere this be privately owned and our outlook for timber supplies adequate for future needs would be far more discouraging than it is.

TIME FOR THE NATION TO ACT

It is time for the forester, the conservationist, the lumberman, the wholesaler, the retailer and the consuming public to sit down together to consider our forest capital, to work out a form of action, a policy having for its object a form of utilization which will stop further devastation and insure forest renewal. It is some encouragement to know that the lumberman appreciates the necessity of stopping further devastation and beginning the reforestation of the vast areas of idle

land which have resulted from past practices. It is unfortunate that although he appreciates the situation he is not as yet willing to undertake forest renewal on his own lands due to his fear of financial loss. It is believed that the more far-sighted, however, are willing to undertake forest renewal if they can secure adequate assistance and financial aid from the public. The public at this time can ill afford to force restrictions and regulations which the private owner can only carry out at large financial loss. The public who are large beneficiaries from forest replacement must bear a part of the burden. With co-operation and generous support on the part of the nation and state in the securing of forest replacement on private forest lands there must be state laws which make it obligatory.

The solution of the very vital and pressing problem of future timber supplies lies first in increasing our public forests,—national, state and communal; secondly in the organization of privately owned forests for sustained yield. We should clearly appreciate, however, that no improvement over our present deplorable situation is possible without liberal financial support on the part of the public. The cost of a single battleship will cover the great burns of the Adirondacks with productive forests; the cost of a single battleship will clothe a million acres of Pennsylvania's areas of desolation and waste with splendid coniferous forest; the cost of a single battleship will develop a forest fire service which in co-operation with the states should effectively protect half the nation's forests.

THE SHAPING OF A FOREST POLICY

To a measure nations go through much the same processes of evolution in respect to forest renewal. We can look with profit to the experience of the older nations in our effort to attain forest renewal in this country. Practically all forests both public and private in Germany, France and Sweden are organized for sustained yield and the annual cut bears a close relation to the annual growth. In these countries the forest problems of the past century have centered in attaining reproduction of desirable species in fully stocked stands. In order to show what is meant by the reproduction of desirable species in fully stocked stands, let me cite the case of Connecticut. Forty-six per cent of this state is returned as timberland, yet when one goes to our retail and wholesale lumber yards he finds that less than ten per cent of the timber offered for sale comes from Connecticut forests.

For a hundred years France has had a fixed policy with adequate reproduction as its chief aim. Without virgin forests she was able to supply the essential needs of the allies for wood during four years of destructive warfare and without seriously encroaching upon her forest capital. China may be cited as the antithesis of France. She

has never practiced forest renewal. Virgin forests disappeared ages ago and with them a great basic resource, the loss of which she most keenly feels to the present day.

The history of the ages demonstrates that in every nation forests decrease in area and in quality and in time disappear when under unregulated private control. History also demonstrates that forests are adequately maintained wherever forest renewal is accepted by the people as a public responsibility and laws are enacted under which it is attainable without serious loss to the individual.

With our relatively small area of publicly owned forests it is shortsighted and most unwise to continue longer our past policy of unrestricted practices of exploitation and devastation of private forest property. The time is at hand when this nation must either initiate a policy of land purchase which will bring under public ownership and control an additional one hundred twenty-five million acres of absolute forest land or else the private owners of the productive forests of America must shift their point of view. They must give up exploitation and devastation because it injures the public. It is not believed the public can secure through purchase, at least in the immediate future, sufficient acreage of absolute forest land to meet our essential requirements. *It is for this reason that we now witness a nation-wide agitation for a national forest policy having for its primary object forest replacement on lands privately owned.*

This agitation was begun by Colonel H. S. Graves, formerly Chief of the U. S. Forest Service, and is being continued in that service by Colonel Greeley, his successor. It has been taken up by the Society of American Foresters, and a few months ago a committee of that society submitted a comprehensive report to its members which has since been accepted by majority vote of the society. Within the past few months more or less complete plans for national and state forest policies have been formulated and advocated by many organizations of foresters, lumbermen and large users of forest products.

The leading forest policy proposals now before the country are three:

- (a) The program of the Committee of the Society of American Foresters.
- (b) The program of the American Paper and Pulp Association and various lumber interests.
- (c) The program advanced by Colonel H. S. Graves.

These proposals have been for the past nine months under discussion in technical magazines, lumber journals and in the public press. All have been criticized more or less severely and each has its advocates. All recognize the necessity for forest renewal. They do not differ in results desired but rather in methods and processes by which results are to be obtained.

The program of the committee of the Society of American Foresters insists that laws should be enacted by the national Congress under which severe penalties are imposed upon the private owners of absolute forest land who do not organize their property and practice forest renewal. *It places the responsibility for sustained yield chiefly upon the private owner of forest property.* This program is more centralized than the others, more sweeping in character and places greater emphasis upon the requirements. This program is radical in that it is centralized in the federal government and combined with a plan for the industrial control of the lumber industry.

The program of the American Paper and Pulp Association insists that the national government should act through the states and that through co-operation and financial support the nation and the state make sustained yield on privately owned forest property attainable without financial loss to the owner. *It places the responsibility for sustained yield chiefly on the public whom they consider the chief beneficiary.* This program does not recognize the mutual responsibility of the private owner and the public and is antagonistic to mandatory state laws for the renewal of forests on absolute forest land that is privately owned.

The program advanced by Graves sets forth a plan under which the national government working through the states provides technical assistance and financial support in effecting forest renewal on private property but at the same time *insists that the state exercise mandatory regulations and provide adequate assistance in co-operation with the national government to make forest renewal certain.* *It places the responsibility for forest renewal on both the public and the private owner.* Co-operation is the key to this plan. It is to be noted, however, that the idea of mandatory laws to control forest replacement on private lands is basic as it is in the more radical program.

THE PROGRAM OF THE COMMITTEE OF THE SOCIETY OF AMERICAN FORESTERS

The committee of the Society of American Foresters has published and widely distributed a most detailed and comprehensive plan. This plan sets forth nine fundamental principles as follows:

1st: Prosperity in peace and safety in war require a generous and unflinching supply of forest products.

2nd: The national timber supply must be made secure.

3rd: The transformation of productive forests into idle wastes impoverishes the nation, damages the individual, is wholly needless and must be stopped.

4th: Unless and until lands can be more profitably employed for other purposes they should be used to produce forest crops.

5th: The ownership of forest land carries with it a special obligation not to injure the public.

6th: The secure and steady operation of the lumber industry is of vital concern to the public.

7th: The lumber industry being nation-wide, uniform and adequate control over it must be national.

8th: National legislation to prevent forest devastation should have three objects:

(a) Control over private forest land.

(b) Only such control as may be necessary to place forest industries on a stable basis.

(c) The transfer of control back to the forest industries as soon as they are willing and able to assume responsibility and respect the public interests.

9th: The national, state and community forests should be maintained and largely increased.

The legislation suggested in furtherance of the proposed plan calls for a national committee in Washington consisting of the Secretary of Agriculture, the Secretary of Labor and the Chairman of the Federal Trade Commission with supreme authority over private timberland, and to operate through regional organizations of government foresters assisted by representatives of the Federal Trade Commission and the Department of Labor.

This commission is political and certain to change with each administration. The legislation proposed goes far beyond that dealing with forest renewal. It provides for reports on the production of forest products from private timberland, reports on sales, stocks on hand, costs and other matters not generally available to the public. It even fixes accounting methods and provides for the control of production when judged desirable by the commission. It permits the government to cut its own timber and provides for the creation of labor councils of employers and workers to consider wages, hours and various other matters. It excludes farmers' wood lots from the legislation proposed and provides penalties for the enforcement of the law. The plan has been severely attacked by the lumbermen of the country and by many foresters as well.

THE PROGRAM OF THE AMERICAN PAPER AND PULP ASSOCIATION

The adherents of this program although fully recognizing that our forest capital is being exhausted much faster than it is being replaced are unwilling that the private owner should assume responsibility for forest renewal. This group has also published and widely distributed a detailed plan for sustained yield. This plan sets forth the following principles:

1st: A program providing for a permanent timber supply must be adequate and practical to produce the needed results, just to all interests concerned and acceptable to the majority.

2nd: There is urgent need for co-operation by the national and state governments to accomplish:

- (a) A forest survey and land classification.
- (b) A great extension of public ownership through the purchase of cutover lands.
- (c) An extension of Federal co-operation with the states in fire protection and in measures which will reduce the fire hazard and afford better opportunities for natural regeneration.
- (d) Better forest taxation laws, the establishment of state nurseries and the preparation of working plans for the purpose of encouraging the private owner who wishes to grow timber. A provision that if the private owner of land only useful for growing timber refuses to co-operate, his land be acquired by the public at a fair valuation and made a part of the area of public forests.
- (e) A large program of planting on lands which have been so far denuded that there is no hope of securing an acceptable crop through natural regeneration.

Special emphasis is placed in this program upon uniting professional foresters, timberland owners and consumers of forest products upon an immediate plan of greatly increased fire protection and a more general acquisition by the public of cutover lands.

In order to make the proposed plan operative the following national and state legislation has been proposed:

NATIONAL LEGISLATION

- (a) A present annual Federal appropriation of one million dollars to be expended in co-operation with the states for fire protection, care and management, and the distribution of planting material, this sum to be gradually increased to a maximum of five million dollars.
- (b) An annual appropriation of five hundred thousand dollars to continue as long as necessary and to be expended in co-operation with the states in making a complete and accurate forest survey and classification of both public and private forests.
- (c) A permanent annual Federal appropriation of not less than three million dollars to be expended in extending the area of national forests until their total area reaches a minimum of at least two hundred million acres.
- (d) The extension of the general authority of the Secretary of Agriculture to exchange national forest land, stumpage and timber certificates for private timberland within or adjacent to existing national forests.
- (e) A present annual appropriation of at least two million dollars for planting operations on the national forests.

(f) A present annual appropriation of five hundred thousand dollars for forest investigation and research.

(g) The extension of the Federal Farm Loan Act to include loans on private forest property and to be expended in the improvement of such lands and in employing measures to promote timber growth.

The appropriations herein requested are modest when compared with the magnitude of the forest industry. There is no doubt that were such appropriations available they would materially improve conditions but in the writer's opinion they cannot in themselves solve the problem of sustained yield on privately owned timberland.

STATE LEGISLATION

The state legislation proposed in this program is based upon the following principle: If forest land like agricultural land bear its share of the support of the state it is essential that it be organized and developed for sustained yield. It is recommended, therefore, that bills be introduced into the state legislatures embodying principles in harmony with the suggested Federal legislation but applicable to the special needs of each state. These bills should provide for a forest survey of the state in co-operation with the national government; for their organization for state-wide fire protection; for adjustment of taxes; for assistance in the practice of forestry by private forest owners, by supplying planting material, making working plans and supervising silvicultural operations free of charge or at the lowest possible cost. These bills should also provide that private forest land may be taken by the state at a fair valuation and made a part of the public forests of the state only in case the private owner refuses to avail himself of the co-operation and assistance provided by the public. Also that a adequate support be given by the state for educational and experimental work in forestry. Furthermore these bills should provide for adequate state appropriations to make them effective.

It is to be noted that the advocates of this plan are willing to accept generous appropriations from national and state governments for the furtherance of sustained yield on private timberland. They are unwilling to assume a part of the responsibility for attaining sustained yield. The state legislation proposed is weak in that it does not adequately recognize the responsibility of the private owner. It is recognized, however, that the private owner has a moral and legal obligation to handle his property in such a way that it does not become a public nuisance and that the state may require him to conduct his cutting operations in a manner to lessen the fire danger.

THE GRAVES PLAN

The immediate program also opposes complete public control of private timberland by a national commission. The advocates of this

plan believe whatever control is exercised by the nation must be by the Federal government acting with and through the several states. *They recognize a decided responsibility on the part of the private owner of timberland.*

This program has been fully described by Colonel H. S. Graves (a) in a pamphlet issued from the office of the Secretary of Agriculture under the title, "A Policy of Forestry for the Nation," (b) in a mimeographed report from the U. S. Forest Service under the title "The principles of a program for Private Forestry" and (c) in a mimeographed report by the U. S. Forest Service under the title "The next steps in a National Forest Policy."

Due to the emphasis placed upon co-operation and from the fact that the program involves local plans to fit local conditions it cannot be as specifically outlined as the foregoing plans discussed. It can, however, be best outlined under the two heads (a) Principles involved, and (b) Federal and state action required.

I. PRINCIPLES INVOLVED

1st. The need of a Forestry program in which it is recognized that no single legislative measure can accomplish the objects desired but that a central national policy is needed adaptable to special regional conditions.

2nd. The object of the program should be to bring about permanent forest production on all lands which are best suited for the growing of timber, and the recognition that this can be done only by adequate protection and by the replacement of old timber when cut with new growth.

3rd. Public forests should comprise critical areas on important watersheds and extensive areas elsewhere to serve for the production of forest products, as demonstration forests and as centers of co-operation with private owners.

4th. The problems of farm forestry should be worked out through the medium provided by the public to educate farmers in better methods of agriculture, and the utilization of commercial timber tracts should require that the public take steps to stop destructive processes and substitute constructive methods of forestry.

5th. That private ownership of forests carries with it certain definite responsibilities, in that private ownership does not give the right to handle forest lands in a way that jeopardizes the public interests.

6th. The character of the forestry problem is such that as a rule the private timberland owner seldom adopts measures tending to the perpetuation of forests upon his own initiative and without direction and co-operation by the public.

7th. The safe-guarding of the public interests in forests requires laws to the effect that the private owner adopt measures for forest replacement but at the same time be given such public assistance and co-operation as may be needed to make such measures feasible in practice; that the mandatory principles in these laws aim to establish uniform requirements to apply to all timberland alike and to be within the possibilities of practical application.

II. FEDERAL AND STATE LEGISLATION REQUIRED

A. FEDERAL LEGISLATION

1st. For the extension of national forests.

(a) Authority to exchange national forest land, stumpage and timber certificates for private forests within or adjacent to existing national forests.

(b) Continued appropriations on a generous scale for acquiring forest land by purchase, until ultimately such acquisitions extend into all the principal forest regions in the United States.

2nd. For co-operation with the states in forest protection and silviculture.

(a) Authority to provide the states liberal financial help and technical aid.

(b) Authority to greatly expand the activities of the U. S. Forest Service in co-operation with the states as now authorized by Section 2 of the Weeks law; this authority to carry with it a yearly appropriation by the National Government of not less than \$1,000,000 to assist the states in forest protection and silviculture, but the expenditures in any state not to exceed the expenditures of the state for the same purposes, and the benefits of the law limited to the states which establish mandatory laws fixing minimum requirements.

3rd. For the securing of better forest taxation and insurance laws, including legislation carrying a moderate appropriation to devise model forest taxation and insurance laws.

4th. For loans on growing timber, through the extension of the federal law concerning farm loans, but such loans to be issued upon a specific obligation assumed by the owner to retain the land in growing timber and to protect and care for it during the life of the loan.

5th. For land classification, through the states but with federal assistance, in order that all lands be put to the most advantageous use and ill-advised attempts to cultivate land which is not agricultural in character be stopped.

6th. For forest surveys and research including a special appropriation for a comprehensive survey of the forest resources of the

United States in co-operation with the states and private interests, and for aid to enlarge research in forestry and in forest products along the lines already under way by the U. S. Forest Service.

B. STATE LEGISLATION

Although this program recognizes that the differences in forest conditions in the several states do not make uniform state forestry laws possible, it recognizes that certain main principles are applicable to practically all of the states which contain forest land but variations in methods of enforcing them are necessary.

The state legislation necessary to carry out the foregoing national program is as follows:

1st. The enactment of laws to the effect that the private owners of forest land are legally responsible for preventing their property from being devastated or denuded of forest growth, and that it should be incumbent on the State Forestry Board to enforce this principle.

2nd. That state law in pursuance of the above should make the following measures obligatory, leaving detailed methods of enforcement to the State Forestry Board.

(a) Organized protection of all forest lands in the state under a system by which the cost is met by the Federal Government, the state and the private owner.

(b) Police regulations for the control of forest fires during critical periods.

(c) Effective disposal of slash in all cutting operations under a method best suited for the particular forest type.

(d) Cutting methods determined and established by the State Forestry Board for application in forest types where protection alone is insufficient for forest renewal.

(e) To provide for assistance to forest owners through the State Forestry Board in the study and classification of land, and for co-operation with the Federal Government in this classification.

3rd. To provide for assistance to the private owners of forest property in attaining forest renewal and to provide for forest investigation and for the systematic planting of denuded lands in state ownership.

4th. To provide funds and the machinery for a large extension of state and communal forests.

5th. To provide a non-partisan control of forestry work in the state through a Forestry Board representing the forest-using, agricultural, and educational interests in the state, with the executive forest officer a technically trained man known as the state forester.

6th. To provide better taxation laws through the creation of a commission in each state to study existing practices and their effect on

forest replacement and to recommend to the state legislature a revision of present laws where advisable, the commission to receive co-operation and aid from the Federal Government.

The differences in the foregoing plans can be briefly stated as follows:

The more radical plan proposes national mandatory laws governing privately owned forest lands. Chief emphasis is placed upon specific requirements imposed upon the owners although public assistance is provided in certain matters. *The more reactionary plan* proposes no mandatory laws, makes no requirements whatever but relies upon encouragement and inducements in the way of public co-operation and aid, with the public ownership of forests as an alternative. *The intermediate plan* imposes certain requirements but emphasizes co-operation and public aid. It makes public action an integral part of the plan and recognizes the necessity of the public's sharing the cost and responsibility. The advocates of this plan believe that state legislatures must provide certain mandatory requirements for forest renewal but that both Federal and state governments must provide co-operation and financial support in making effective a system of forest management for each locality which will result in sustained yield without placing an undue burden on the private owner.

It is the writer's judgment that the solution of our forestry problem will be found most likely in the development of a forest policy based upon the principles and legislation now under process of development by the advocates of the intermediate plan. This plan recognizes a dual responsibility resting upon both the public and the private owner of forest property. It recognizes not only the necessity for liberal national and state appropriations and the heartiest co-operation between the public and the private owner but it also recognizes that where there are reciprocal public concessions to be safeguarded reasonable requirements are essential.

Although we are not yet ready for radical Federal coercive laws and it is the writer's hope we never will be, the time will very likely come in the not distant future when the private owner, as in many European states, although permitted by the state to cut by whatever method he pleases, must attain adequate reproduction on cutover areas to satisfy the rigorous examination of a board of foresters. Some day the state will say to the private owner, "We are concerned in keeping absolute forest land permanently under forest. We judge you by the condition of your cutover land. If it is unsatisfactory from the standpoint of public welfare, we will improve it if you do not, and charge the cost against the property."